



ABOVE • Circus clowns visited NIH on Mar. 23 to tout charity event for youth. See p. 12.

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nih record

Rockey's Love of Mission Transmits to Women's History Month Audience

By Rich McManus

It seems entirely possible that NIH deputy director for extramural research Dr. Sally Rockey is able to summon nearly the same amount of enthusiasm about coming to work each day as she does about going to see Bruce Springsteen in concert, which she has done some 53 times so far.

NIH's extramural boss, it turns out, loves The Boss and is also proud to be a bureaucrat, as long as she gets to define the term.

The featured speaker at NIH's 2011 Women's History Month Observance on Mar. 16, Rockey offered a lively account of the "love story" that has taken her from graduate studies in entomology to one of the highest posts in federal science. Or as she puts it, "From studying bugs to developing drugs."

As a child, Rockey loved animals, and collected toy horses, not dolls. "I was curious



Dr. Sally Rockey

SEE WOMEN'S HISTORY, PAGE 6



Rebecca Skloot

Author Offers Story Of Immortal Cells in Lecture, Book

By Valerie Lambros

For nearly 60 years, very little was known about the origin of the human cells that have helped scientists study polio, cancer and various viruses, craft vaccines and therapies, investigate

the effects of the atom bomb, develop *in vitro* fertilization and make headway in cloning and gene mapping.

But courtesy of the extensive efforts of determined author Rebecca Skloot, it turns out these remarkable cells all trace back to one woman, a poor black mother of five children who died in 1951 at age 30 from invasive cervical cancer. Her name was Henrietta Lacks, and her cells—still alive today—are called HeLa.

SEE SKLOOT, PAGE 4

MSKCC's Massagué 'Deconstructs' Metastasis for Lipsett Crowd

By Rich McManus

During a 70-minute overview of the really nasty player in causing cancer deaths—metastasis, or the spread of cancer from a primary tumor, which accounts for more than 90 percent of cancer mortality—Dr. Joan Massagué of Memorial Sloan-Kettering Cancer Center occasionally sounded more like a cultural anthropologist than a cancer biologist. Foregoing a pejorative tone about these cells, he described them as hearty and inventive tourists, or rather émigrés that have a knack for wandering abroad and finding what they need to survive.

To be benign about something so malignant is to give up none of the warrior's intent, how-



Dr. Joan Massagué

SEE METASTASIS, PAGE 8



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briefs

Take Your Child to Work, Apr. 28

NIH will host the 17th Take Your Child to Work Day on Thursday, Apr. 28, sponsored by the Office of Equal Opportunity and Diversity Management. Activities will take place at various locations on and off campus from 9 a.m. to 4 p.m. Take Your Child to Work Day is an educational program that revolves around parents taking their children to work for one day. The focus of the program is to challenge and empower children to explore various professions. NIH coordinates a day full of activities relating to health, research, science and administration.

You can register at <http://takeyourchildtowork.nih.gov>. The online registration system will close at noon on Monday, Apr. 25. On Tuesday, Apr. 26, parents will receive an email with their child's schedule, showing all activities for which they are registered. Activity sponsors will receive class rosters for each of their sessions.

On Apr. 26-27, registered parents will be able to sign in and pick up registration materials in the South Lobby, Bldg. 10, between 8:30 a.m. and 4:30 p.m. On Thursday, Apr. 28, sign-in will be in the South Lobby between 8 a.m. and 1 p.m.

NIMH Sponsoring Panel for Children's Mental Health Awareness Day

Four experts on research in children's mental health will talk about the state of the science in an NIMH-sponsored panel discussion taking place as part of Children's Mental Health Awareness Day, May 3.

The event is part of the Caring for Every Child's Mental Health campaign by the Substance Abuse and Mental Health Services Administration. It seeks to raise awareness about the importance of children's mental health and to convey the message that positive mental health is essential to a child's healthy development from birth.

The NIMH panel discussion will take place on campus and will be videocast so that the public can view the event. Participants in the panel will be NIMH scientists Dr. Ellen Leibenluft, whose focus is the brain mechanisms involved in bipolar disorder in children and adolescents; Dr. Daniel Pine, whose research focuses on the epidemiology, biology and treatment of psychiatric disorders in children and adolescents; Dr. Jay Giedd, who has conducted long-term studies of brain development in children and adolescents; and Dr. Benedetto Vitiello, who has been part of many clinical trials testing the effects of

interventions for conditions affecting mental health in children and adolescents. NIMH director Dr. Thomas Insel will moderate.

The panel discussion will take place from 2 to 3:30 p.m. in Bldg. 31C, 6th floor, Conf. Rm. 6. To register and for information on viewing the videocast, go to <http://guest.cvent.com/d/6dqb5l>; send questions to nimhpress@nih.gov.

Shalala To Keynote Career Symposium, May 10

The NIH Office of Intramural Training & Education invites all NIH graduate students and postdoctoral trainees—basic scientists and clinicians—to participate in the NIH Career Symposium on Tuesday, May 10 at the Natcher Conference Center and Lister Hill Auditorium from 8 a.m. to 4:30 p.m. The symposium provides an opportunity for fellows and graduate students to learn about scientific career options and to explore factors that lead to career success. Panel sessions cover academic, government, industry and non-profit career paths. More than 80 speakers will provide insights into their careers: what their current job entails, its pluses and minuses and how they got there. Former HHS Secretary Donna Shalala, president of the University of Miami, will keynote this all-day event. To register, visit www.training.nih.gov. The event is organized by OITE, Felcom and the Graduate Student Council.

R&W Hosts Leisure & Travel Expo, Apr. 26

Come to the R&W Leisure & Travel Expo and get information about local and regional destinations for vacations. The expo will be held on the Bldg. 31A patio on Tuesday, Apr. 26 from 10 a.m. to 2 p.m. Vendors will include hotels, car rentals, visitor bureaus, dinner cruise lines, amusement parks, whitewater rafting coordinators, mountain resorts and more. This event is free and you will be able to enter to win a variety of prizes. Also Chick-Fil-A will be on hand with lunch for sale.

Free Concert Previews FAES Class, Apr. 15

A free concert will be held Friday, Apr. 15 at noon in the atrium of the Clinical Research Center. The event will introduce a course sponsored by FAES titled "Art Songs: Chamber Music with Words," which is coming up fall semester 2011. The course is presented as lectures with live performance and will be described at the Apr. 15 concert. The concert will be given by Suzanne Epstein, voice, and Jessica Krash, piano, and will include songs of Mahler, Fauré, Schubert, Chopin and Barber. For more information, email epsteinsue@gmail.com.

nih record



Lord Nigel Crisp said health professionals should look to low- and middle-income countries for low-cost innovations.

PHOTOS: ERNIE BRANSON

Don't Just Emulate West, Says Global Health Advocate

By Steve Goldstein

Six years as chief executive of the U.K. National Health Service did not make Lord Nigel Crisp a global health advocate. His education followed his retirement from NHS in 2006, when he co-chaired an international task force on increasing the education and training of health workers globally and traveled widely in the developing world.

"I learned three basic lessons," Crisp said during a lecture on capacity-building sponsored by Fogarty. "Stop telling people in the developing world what to do, support the education and training of health workers in their own countries and—we have a lot to learn from them."

A member of the British House of Lords, Crisp is the author of *Turning the World Upside Down: The Search for Global Health in the 21st Century*, which stresses the need for co-development and mutual learning instead of traditional top-down approaches to training and health innovation.

Illustrating the disparities in global health resources, Crisp said that sub-Saharan Africa has 10 percent of the world's population, 25 percent of the disease burden and only 1 percent of the health workers.

He said health professionals should look to low- and middle-income countries for low-cost innovations. He cited specific methods, such as treating cases of clubfoot in Africa by early and regular manipulation of the foot when surgical intervention is not available. He noted breakthroughs in products as with the development of "new and cheaper" lenses for cataracts by Aravind Eye Hospitals in India. Crisp also mentioned the increasing use of mobile health to deliver medical information to isolated communities and remote regions.



Addressing an audience at Fogarty, Crisp stressed the importance of co-development and mutual learning in developing countries.

what's happening in countries where people are innovating in different ways."

There's also been a significant change, Crisp said, "as to what health systems look like." There's more of an engagement by the community, by family and women, he said.

"I'd been talking to some development people in Britain about how they were going to tackle maternal mortality in Bangladesh and they described some detailed plans," said Crisp. "When I mentioned this to [a Bangladeshi official] and asked what the real issue about improving maternal mortality was, he said, 'Empower the women.' And it was quite an interesting contrast to our heavily technical approach and his social approach."

This supports the argument for co-development, he said, because the ability to draw from other practices and traditions is essential. It may help also to avoid the faults and weaknesses of richer, developed nations. "The danger is people copying our systems...which don't work very well at the moment," he said. "There's lots of good stuff in what we do, but some bad stuff, too."

Crisp cited the benefits of working in developing countries—remembering why one joined the health profession in the first place, gaining cultural awareness—and learning specific skills and practices. "But the really important stuff is challenging our long-held ideas," he said. The success of a program such as the Medical Education Partnership Initiative in Africa is how you're going to blend the curriculum you're bringing with you with what they already have and shape the future together, he said. 📍

FAES Offers Free Community Shred Day

On Friday, Apr. 22, from 4 to 7 p.m., the FAES, in collaboration with Torn-2Shredz, will sponsor a Free Community Shred Day as part of its observance of Earth Day. The event will take place at the FAES Social & Academic Center, 9101 Old Georgetown Rd. (across the street from NIH, on the corner of West Cedar Ln. and Old Georgetown Rd.). Limited compact fluorescent light bulb and battery recycling will also be available. Watch on closed-circuit TV while your old bank and credit card statements are destroyed and then sent for recycling. Protect your identity while you protect Mother Earth. Attendees are asked to limit themselves to 2 bankers boxes worth of personal documents. For more information, contact FAES property manager Rose McNeely at (301) 530-2194 or FAESSAC@gmail.com.

SKLOOT

CONTINUED FROM PAGE 1



Above:

Skloot chats with NIH director Dr. Francis Collins on Mar. 14; she gave this year's J. Edward Rall Cultural Lecture.

Above, r:

Skloot said she reached out to Henrietta Lacks' children to get material for her book.

PHOTOS: BILL BRANSON

For this year's J. Edward Rall Cultural Lecture on Mar. 14, Skloot shared her experiences in researching, working with members of the Lacks family and writing a book, a process that took more than 10 years.

The book, *The Immortal Life of Henrietta Lacks*, went on to be a *New York Times* bestseller, to be named Amazon.com's Book of the Year for 2010 and win a host of other awards and literary prizes. It describes not only the science behind the world's first immortal cell line (meaning the cells continue to grow and divide given the proper environment), but also the ethics behind using biological material without consent, the commercialization of the cells and the medicines that have been developed with them that have made some companies very wealthy.

"Show of hands, how many of you have used HeLa cells in your lab?" Skloot asked a capacity Masur Auditorium audience. Nearly half the audience raised their hands.

"One of the most common statements that I get when scientists learn about where HeLa comes from is 'I never knew,'" she said.

It was because of that mystery that Skloot got interested in learning about the cells, where they came from and why nobody talked about the person whose cells were behind so many medical discoveries. She first heard of the cell line when she was a 16-year-old high school student, taking a biology class at a community college. The name "Henrietta Lacks" was scrawled on a chalkboard, discussed for perhaps a minute at the end of a class and then summarily erased from the board. Skloot was intrigued.

Fast-forward years later and Skloot had completed a B.S. in biology and gone on to graduate work that found her elbow-deep in learning and writing about science. She returned to the mystery of HeLa.

Her early efforts to talk with Henrietta's children and family weren't especially successful. Countless others had come before her, never really explaining how important the cells were to science or how tiny pieces of their mother were actually still alive. Skloot described the first time she ever spoke with Deborah, Henrietta's youngest daughter, about her mother.

"At first she was ecstatic. She said, 'This way I can learn about my mother.' She threw out little bits of her story, but then she panicked and hung up on me," said Skloot, who said the



very action of reaching out to a family that didn't fully understand what cells were made her question how she was going to move forward. "I didn't know where my entry fit into the narrative."

The Lacks family, though curious about Henrietta's legacy, had grown to distrust outsiders who always seemed to want something, but never explained the science or what these cells meant to the research community.

"I have never met anyone who wanted to learn as badly as Deborah did," Skloot said. "That got the best of her. She realized she wanted to learn more than she was scared of me."

So Skloot started sharing with Deborah everything she found out about her mother as she learned it, from medical information and the reason why Henrietta died, to why the cell sample was taken and what those remarkable cells had gone on to become. Deborah shared her mother's journal with Skloot and often accompanied her to the library or to labs.

"You can't hide anything from me, you have to tell me everything," Skloot recalled Deborah saying to her. "That was the only qualification she ever put on anything I did."

What the project became was an all-encompassing look at the scientific breakthroughs that came as a result of work with the cells and a full accounting of the ethical fallout posed by the pre-regulation 1950s practice of taking cells for research without consent, the eventual mass production of that material (which made some companies rich) and the poverty that Henrietta's family still lives in—and makes them unable to go to a doctor.

Skloot said she found herself hoping that writing a book about the cells and the woman behind them wouldn't make matters worse for the family. So, with proceeds from her book, she began the Henrietta Lacks Foundation. It offers medical and tuition help not only to Henrietta's descendants, but to any patients or family members of patients who have been critical to breakthroughs in science because of biological material taken without their knowledge. 1



Science writer Maggie Fox

Fox To Keynote Plain Language/Clear Communication Awards Ceremony

NIH will celebrate outstanding writing and production from across the agency at the Plain Language/Clear Communication Awards ceremony on Tuesday, May 17 at 1 p.m. in Masur Auditorium, Bldg. 10. All are welcome to attend.

Each annual awards event features a talk by a noted communications expert. This year, health and science writer Maggie Fox, managing editor for technology and health care at the National Journal Group and long-time correspondent for Reuters, will speak about “Losing the Static: How Compromise Helps People Hear You.” Fox knows NIH well and has written many stories about all aspects of NIH science and policy. She will also take questions from the audience.

The Office of Communications and Public Liaison, OD, sponsors the Plain Language/Clear Communication initiative and the awards program. Each year, a top award winner is additionally recognized with an NIH Director’s Award. Since President Obama signed the Plain Writing Act of 2010 on Oct. 13, 2010, there has been renewed commitment to plain language and clear and transparent communication.

The ceremony, now in its 11th year, is one of many efforts to bring better communication to employees and the public. Keep an eye on www.nih.gov/clearcommunication/plainlanguage.htm for a growing number of helpful resources.

This year’s committee received more than 400 submissions including health promotion materials, outreach items, visual, multimedia and social media products, administrative documents, training manuals and foreign language materials. Reviewers included representatives of institutes, centers and OD as well as outside reviewers tapped for special expertise, including the Council of Public Representatives.

Sign language interpretation will be provided. For other reasonable accommodation, call (301) 496-5787 or the Federal TTY Relay (1-800-877-8339) before the event.

4th Annual Event ‘Take a Hike Day’ Set, May 11

It’s time once again to grab a coworker or two and lace up your walking shoes. All NIH employees and contractors are invited to participate in a non-competitive walk/fun run on Wednesday, May 11, from 11 a.m. to 2:30 p.m. The event begins at Bldg. 1, rain or shine.

Online registration began on Apr. 4 and will remain open through Friday, Apr. 22. To register, go to http://does.ors.od.nih.gov/fitness/hike_registration.htm.

Earn your institute/center bragging rights for having the most registered employees participating in this year’s Take a Hike Day. Before the 2.8-mile walk/fun run around NIH’s perimeter begins, the six ICs with the most registered employees will be recognized by the NIH director with their own 2011 NIH Take a Hike Day trophy. Winners will be determined based on the highest percentage of employees who register within their IC.

We supply the tables and water—you supply the decorations and cheerleaders. Bring your signs and pompoms and form your cheering section at one of the five perimeter water stations. Tables will be assigned on a first-come, first-served basis. If you would like to sponsor a water station, contact Pamela Jenkins at (301) 402-8180.

For details, visit http://does.ors.od.nih.gov/fitness/hike_schedule.htm.

Take a Hike Day is sponsored by the NIH Office of Management, the Office of Research Services and the NIH Recreation and Welfare Association. It is being held in conjunction with the National President’s Challenge and the Office of Personnel Management HealthierFeds Initiative.

Individuals who need sign language interpreters and/or reasonable accommodation to participate should contact Jenkins. Requests should be made at least 5 days before the event.



NLM Observes ‘Preservation Week’

After a success last year, NLM is expanding its Preservation Week activities in 2011. On Apr. 25, 27 and 29 respectively, the library will host lectures on rare book appraisal, the identification, care and storage of photographs and the work of the conservator: how art and science are joined together in the preservation of our cultural patrimony. Speakers Allan Stypeck, Sarah Wagner and Scott Nolley will also conduct Antiques Roadshow-style appraisals of your books, photographs, paintings and art objects. (Make appointments via the web site.) NLM staff will be on hand, too, demonstrating a range of preservation techniques. All activities will take place in Lister Hill Center (Bldg. 38A) and are open to the public. For a full schedule of events, speaker biographies, a list of preservation resources and more, visit www.nlm.nih.gov/psd/preservationweek/. At right, this scrapbook, chronicling events in the life of Charlotte Wassef, Miss Universe of 1935, was among the treasures brought in by NIH staff at last year’s NLM Preservation Week.



PHOTO: E. DÉSHAUN WILLIAMS



WOMEN'S HISTORY

CONTINUED FROM PAGE 1

Above:

Also on the Women's History Month program with Rockey were NIH director Dr. Francis Collins and NINR director Dr. Patricia Grady.

PHOTOS: BILL BRANSON

about animals," she said, "and that led to an interest in biology. I knew from a very young age that I wanted to be a scientist."

But the insect world repelled her. "I totally despised insects," she said. "I was terrified of them."

She studied zoology in college, mainly because it offered a variety of career options. During senior year, she took her first entomology course. "It was like a lightning bolt," she said, "when I started understanding these curious creatures."

Despite the misgivings of her parents, Rockey began pursuing a Ph.D. in entomology at Ohio State University, an admittedly "unexpected choice" in a career that would become defined by the embrace of alternative paths.

One of two women in a graduate program of 60 students, Rockey was lucky enough to find a remarkable mentor, who encouraged her love of science and her career. But she did lament the dearth of female role models with whom she could commiserate.

Rather than pity her condition, however, Rockey said she "learned to lead as a way to excel. I discovered then I had particular skills in management."

After earning her doctorate, she entered another unfamiliar world—federal science, about which she knew nothing—at the U.S. Department of Agriculture's extramural program. It was there that the mission of public service became clear to her and that the term "bureaucrat" lost its taint.

"I lovingly refer to myself as a bureaucrat," she said. "I really did believe in public service, and in the government's role of helping others achieve their goals."

Although she now recognizes that her forte is research administration and management, she didn't know what those terms meant at the outset of her government career.

"I was worried about what would happen if I left bench science," she said. "Could I go back? Would I have any impact?"

Rockey said she was delighted to discover that, as an administrator, she could set national research priorities, gain a broad perspective on science, meet the community of investigators and, best of all, never stop learning.

"I have learned more science as an administrator than I ever would have known otherwise," she told the Wilson Hall audience.

She became a national expert in the field of federal assistance while at USDA, but before leaving there, she was thrown another curveball when she was abruptly named chief infor-

"Embrace the unexpected—it's one of the most important things we can do in our careers."

mation officer. "I didn't know a router from a switch," she said, "but it turned out to be one of the greatest experiences of my life."

Within 2 years she turned a failing IT enterprise into a success, mainly by resorting to management skills she had developed years earlier.

At NIH for the past 6 years, Rockey says she's having the time of her life and "an exceptional experience." Although attracted by NIH's mission, she was also intimidated when she first arrived on campus and found "all these people with brains the size of a planet."

"I had to be a quick study," she explained. "There was so much about NIH to learn. It was hard work. Around here, you find yourself developing sweat beads every day."

She offered data on how women compare with men in NIH's workforce, noting that in the higher grades, women fare markedly better on the extramural side, where they comprise 53.1 percent of positions GS-14 and above, than in the intramural program, where the percentage hovers stubbornly at around 21. However, NIH'ers holding Title 42 (highest paid) posi-

tions include 61.3 percent men and 38.7 percent women. Rockey also talked about investigators in the extramural workforce outside NIH and how their numbers are growing, "although we still have a ways to go."

"We need to do a better job of promoting women in biomedical research," she said, adding that the pipeline of women trainees is fairly robust, although with some drop-offs at specific career milestones.

She concluded, "I love being a critical part of the scientific enterprise. NIH has an astounding mission and I do feel I have a personal impact. I love getting up in the morning and going to work." She advised, "Embrace the unexpected—it's one of the most important things we can do in our careers."

Taking questions, she admitted that more than 30 years of insomnia have given her an advantage in balancing work demands with hobbies that include bridge, a book club, gym workouts and guitar lessons. She also conceded that listening was a skill she had to master. "I have to practice it deliberately," she said.

The observance also included remarks by NIH director Dr. Francis Collins, who noted that during a recent 9-day sojourn in South Africa, he was especially impressed by the contributions of "fearless and courageous" women who staffed the outlying clinics he visited. He noted that six institute/center directors at NIH are women and that women comprise more than 59 percent of the NIH workforce, but "there is still work to do" in encouraging the path to senior leadership for women at NIH.

NINR director Dr. Patricia Grady concluded the event by encouraging women to emulate Rockey as sharers of career success stories. "We salute all women who have excelled in science and other professions," she said, "and we look forward to a new generation of trailblazers." 📍

Seeking Former POPI Parents

The board of directors of Parents of Preschoolers, Inc. (POPI), one of the child care facilities on the NIH campus, is looking for NIH'ers who used to have children at POPI to join its board. POPI is expanding its board and looking for parents who know and love the center and who also have expertise in law, finance, early childhood development or human relations. If you are interested in getting more information, email board chair Wendy Sharp at wendysharp24@gmail.com or the entire board at POPI-BOARD_DIRECTORS@LIST.NIH.GOV.



Members of the population sciences and epidemiology B study section participate in the first NIH telepresence review meeting.

'Telepresence' Review Meetings Impress CSR Reviewers, Staff

"It's not your father's video meeting," said CSR director Dr. Toni Scarpa. "Amazing stories are coming from reviewers and staff participating in new 'telepresence' review meetings." For the last year, CSR has tested these meetings, which use customized conference rooms in hotels and other locations across the country.

Reviewers gather in two or more of these rooms, which have large screens that place reviewers in different cities around a virtual table.

Dr. Nancy Reynolds, who directs doctoral and postdoctoral programs at Yale University School of Nursing, chaired a telepresence meeting from New York City. "It went extremely well," she said. "You had a sense of people sitting at the same table...you could see their expressions."

Scarpa laughed about one meeting he attended. "I went looking for my reading glasses," he said. "I thought I saw them on the conference table, but when I went to grab them, I reached for glasses in San Francisco!"

"Telepresence meetings envelop you to the point that the technology disappears," said Dr. Ross Shonat, CSR's telepresence coordinator. "In one meeting, two reviewers in different cities who had a conflict with an application had to leave the meeting. One was surprised for a second that he didn't meet the other reviewer in the hallway."

"In some respects, telepresence meetings are better than regular meetings," Shonat continued. "You can often hear and see better because the system is so responsive to the reviewers when they speak."

Reynolds is more than pleased with the technology. "For me, the great advantage was the reduced travel time. I just hopped on a train to New York," she said. "Sometimes you have to give up a whole day to travel."

"Reducing reviewer burdens in this way is the main reason for testing telepresence," said Scarpa. "Such electronic meetings are extremely valuable if they are the best way to engage the reviewers we need." He noted that CSR holds about 15-20 telepresence meetings each review round. A typical meeting runs about 7 hours, accommodating schedules on both coasts.

So far, CSR has held telepresence meetings in New York City, San Francisco and Bethesda. "Because the feedback has been so amazing, we're looking to add more meetings and cities," Scarpa said. "We hope to bring in reviewers via sites in Boston and Los Angeles soon."



METASTASIS

CONTINUED FROM PAGE 1

Above, l:

An overflow crowd outside Lipsett Amphitheater listens to Massagué's talk on Mar. 28.

Above, r:

Massagué set forth the conditions for metastasis: the vagrant cells must "survive on arrival," demonstrating "early competence," then "stay fit during early residence."

PHOTOS: BILL BRANSON

ever; Lipsett Amphitheater was filled to capacity not because Massagué tells agreeable stories, but because he is keen on learning how the sleeper cells of cancer terrorism survive and do their work. Figure that out, and you may have a chance against the disease, he suggested.

Currently program chairman in cancer biology and genetics at MSKCC and an HHMI investigator, Massagué called metastasis "the biggest problem in cancer biology." In a talk describing "the signals and pathways of the metastatic niche," he sought to explain what allows certain cells to "graduate" to the metastatic state.

Using the example of breast cancer in a woman, Massagué said that months before a tumor is detected and surgically removed, a process called dispersion and seeding may already have taken place. That is, micrometastases somehow found a window of escape and migrated throughout the body.

"Small does not mean inert," he cautioned. "Most of these cells will perish, but some will get through." Because they are traversing foreign territory, many of the cells run afoul of natural killer cells and other immune defenses. "These cells never saw that environment before, and perish."

But a few establish beachheads, long before disease manifests. Latency can persist anywhere from months to decades. "We know the least about what we don't see growing," Massagué said.

He then set about literally deconstructing the lifestyles of these dangerous vagabonds, using two starting points, the source tumor and the site of successful colonization, the metastasis.

It was hard not to imagine the metaphors of travelogue or literary plot as Massagué set forth the conditions for metastasis: the vagrant cells must "survive on arrival," demonstrating "early competence," then "stay fit during early residence."

In an example using lung adenocarcinoma, Massagué's itinerant troublemakers stay put upon landing and "hug the vessel...they don't let go, they don't crawl. It takes time to colonize."

Only a tiny minority of cells are capable of such high-risk tourism, "but that's still too many," Massagué said.

In their "interrogations" of the source tumor, Massagué and his colleagues found a number of signaling pathways that were linked to successful metastasis. The Wnt pathway, for example, is tied to metastasis to brain and bone.

Studying breast carcinoma that had spread to bone, his team learned that Src is clearly associated with that process.

Turning their analysis to metastases themselves, or end-products of the migratory cycle, Massagué and his colleagues again found a number of genes associated with secondary tumors, largely through gene expression profiling.

Two molecules emerged as especially bad actors. One, tenascin C hexabranchion, a six-armed critter "looks like it wants to play the piano," quipped Massagué. But it has remarkable skill in initiating tumors in the lung when detected in breast tumors.

Another molecule, VCAM1, found in endothelial cells, also seems especially good at enhancing metastasis, especially "survival on arrival."

Toward the end of his talk, part of the NCI Center for Cancer Research's Eminent Lecture Series, Massagué demonstrated how some tumors "self-seed," that is, send out colonists that not only thrive at a distant site but also report back and gain even more metastatic power, becoming "the best of the worst." Such seeding can "go on in all directions, perhaps multiple times," he said.

During a brief Q&A session, one weary attendee wondered how therapy could ever successfully thwart such relentless and sophisticated attack. Massagué, a warrior now, not a tour guide or anthropologist, said there are already countermeasures for some cancers, and that oncologists are getting better at stratifying patients based on tumor characteristics. The hunt for biological bin Ladens goes on. ●

milestones

CSR's Dhindsa Retires After 36+ Years at NIH

By Paula Whitacre

Dr. Dharam Dhindsa has a motto: "What you can do tomorrow, do today. What you can do today, do now." Putting that motto into action took him from a farm in India's Punjab province, through graduate work and an academic career in the United States to 36½ years of service at NIH. He retired recently as deputy chief of the surgical sciences, biomedical imaging and bioengineering integrated review group (IRG) in the Center for Scientific Review.



As a boy, Dhindsa studied by kerosene lamp alongside his cousins and two brothers. His father sat nearby, making sure the young people stayed on task. "My father did not have formal schooling, but he understood the value of education," he said. "He would tell us that land can always be divided, but you can never divide an education."

After earning a doctorate in veterinary medicine from Punjab University and working for the government of India, Dhindsa was encouraged to further his studies in the U.S. He received his M.S. from Montana State University and Ph.D. from the University of Illinois. He focused on increasing livestock reproduction through such means as *in vitro* fertilization—research that presaged advances for humans.

He and his family went on to Oregon, where he was a postdoc at the University of Oregon Medical Center and, from 1971 to 1975, chaired the department of animal science at the Oregon Zoology Research Center. In 1975, he came to NIH, hired by Dr. Stephen Schiaffino as executive secretary (scientific review officer) for a study section on reproductive biology. In 1992, he moved to a surgery, radiology and bioengineering study section; he became the IRG deputy chief in 2004 under chief Eileen Bradley. From 1984 to 2004, he also served as a referral officer, assigning grant applications to the appropriate peer review group.

"He always said if one of us fails, we all fail, and if one of us succeeds, we all succeed," said Bradley. Dogged and tough with coworkers, reviewers and especially himself, Dhindsa, she said, also consis-

tently asked about ailing family members, children's milestones or other aspects of life, offering to help however he could.

While in Oregon, Dhindsa received three NIH grants, but recalled, "When I was 'outside,' the grant process seemed like a black box. So I pledged to explain what I could when I came to NIH."

Over the years, many universities and professional societies invited him to present on the NIH peer review process. "I liked getting junior scientists together without senior scientists, so they would feel more comfortable asking questions," he said. In 1999, he went to Montana for a peer review workshop, his first return since graduate school. "I spent 1½ days, going from meeting to meeting," he said. "My voice was completely gone by the end, but it was a pleasure."

Bradley commented on Dhindsa's deep respect and concern for the peer review process. "He would remind us that the health of the nation depended on us getting peer review right," she said. "He had his eye on the end game."

Dhindsa has written more than 100 peer-reviewed articles, organized 6 workshops on emerging areas of science related to his study sections and frequently returns to India to work on livestock improvement and other projects. Among his many awards and other recognition, both within and outside NIH, he is especially proud of being elected a fellow of the American Institute for Medical and Biological Engineering in 2004.

Just as Dhindsa's father encouraged him and his brothers, he is proud of his family. Two sons are physicians and one is a lawyer; they are also active community volunteers.

That motto about doing things now has served Dhindsa—and NIH—well.

Six New Members Join NINDS Council

The National Advisory Neurological Disorders and Stroke Council recently welcomed six new members.

Dr. Ben A. Barres is chair of the neurobiology department at Stanford University School of Medicine and a past chair and evaluator for the NIH Director's Pioneer Awards. His research focuses on the interaction between neurons and glial cells in the nervous system.

Dr. Robert B. Darnell is the Robert and Harriet Heilbrunn professor of cancer biology at Rockefeller University, where he also directs science programs at the university's Center for Clinical and Translational Research. He pioneered new methods to study RNA regulation in the brain and is an expert on rare neurological disorders triggered by an immune response to common cancers.

Dr. Sharon E. Hesterlee is senior director of research and advocacy at the Parent Project Muscular Dystrophy. Her area of expertise includes translational research and brokering public-private research collaborations to develop drug treatments for neuromuscular diseases.

Dr. Eve Esther Marder is the Victor and Gwendolyn Beinfeld professor of neuroscience at Brandeis University and head of the university's division of science. A member of the National Academy of Sciences, she has conducted seminal studies of motor pattern generation, neuromodulation and use of the dynamic clamp.

Dr. Robert Enrico Pacifici is chief scientific officer of CHDI Management, Inc./CHDI Foundation, Inc., a nonprofit drug discovery organization that supports international research on novel therapies for Huntington's disease. He also chairs the NINDS Spinal Muscular Atrophy Project steering committee.

Dr. Amita Sehgal is the John Herr Musser professor at the University of Pennsylvania Medical School, where she is co-director of the Comprehensive Neuroscience Center. She is also a member of the Institute of Medicine and an expert in research on the molecular and genetic components of circadian rhythms and sleep. 1

Most Teens with Eating Disorders Go Without Treatment

About 3 percent of U.S. adolescents are affected by an eating disorder, but most do not receive treatment for their specific eating condition, according to an NIMH-funded study published online Mar. 7 in the *Archives of General Psychiatry*.

Dr. Kathleen Merikangas of NIMH and colleagues analyzed data from the National Comorbidity Study-Adolescent Supplement, a nationally representative, face-to-face survey of more than 10,000 teens ages 13 to 18. Previously published results found that about 20 percent of youth are affected by a severe

mental disorder and a substantial proportion of these youth do not receive mental health care.

In this new study, Hispanics reported the highest rates of bulimia while whites reported the highest rates of anorexia.

The majority who had an eating disorder also met criteria for at least one other psychiatric disorder such as depression. And each eating disorder was associated with higher levels of suicidal thinking compared to those without an eating disorder.

The prevalence of these disorders and their association with coexisting disorders, role impairment and suicidal thinking suggest that eating disorders represent a major public health concern.

NIH Study Identifies Gene that Suppresses Cell's Immune Activation

A new study of prostate tumors has shown that a gene, FOXO3, suppresses activation of cells related to immunity and thus leads to a reduced immune response against a growing cancer. One of the main problems in treating cancer by vaccine or immunotherapy is that tumors often evade the body's immune response—and one of their tricks is to create an environment where immunity is inhibited or suppressed. By identifying a gene that makes immune cells suppressive, the researchers may have found a new target for enhancing immune responses to cancer

tumor cells. The study, by scientists from the National Cancer Institute, appeared in the *Journal of Clinical Investigation* on Apr. 1.

“Our research suggests that it may be possible to boost immune responses to tumors and prevent immune suppression if we target FOXO3, either directly or with prostate and other cancer vaccines,” said Dr. Arthur A. Hurwitz, head of the tumor immunity and tolerance section, NCI. “This might be achieved by using small molecule drugs or peptides that target FOXO3 in dendritic cells or by silencing FOXO3 expression in dendritic cell vaccines that already exist, making them more potent. We believe this finding could also be applied to treating autoimmune diseases, where therapies aimed at inducing immune suppression may benefit from enforcing expression of FOXO3.”

NLM Offers Resources for Japan Disaster

Three resources at the National Library of Medicine are available to those who need urgent access to health information related to tsunamis, earthquakes and radiation events affecting Japan.

Radiation Emergency Medical Management (REMM)—Clinicians who need to learn about assessing and managing radiation emergencies are urged to use the REMM web site at <http://remm.nlm.gov/>. Selected key files from REMM are also available for downloading on mobile devices from <http://remm.nlm.gov/download-mremm.htm>.

Emergency Access Initiative—The EAI (<http://eai.nlm.nih.gov>) has been activated in support of medical efforts in Japan. It is a partnership between NLM and participating publishers to provide free access to full-text articles from over 230 biomedical journals and over 65 reference books and online databases to health care professionals and libraries affected by disasters. EAI was activated three times last year following the earthquake and subsequent cholera epidemic in Haiti and during devastating flooding in Pakistan.

Japan Disasters Topic Page—A new page of links to information on the Japan earthquake, tsunami and radiation event is now available at <http://disasterinfo.nlm.nih.gov/dimrc/japan2011.html>. The resources on this page may help with understanding the health issues related to the earthquake, tsunami and nuclear power plant disruptions.



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Research Study Volunteers Needed

Do you drink alcohol? Drink daily or almost daily? Are you between the ages of 21 and 60? NIAAA is seeking men and women to study whether a medication for smoking cessation (Chantix) may affect drinking. Volunteers should be healthy and drug-free. Qualified subjects will be reimbursed for their participation. The study lasts 9 weeks and requires 5 outpatient visits and 1 overnight visit at the Clinical Center. For more details, call (301) 496-7500. Refer to study 08-AA-0137.

Smokers Needed for Study

The Molecular Imaging Branch, NIMH, is looking for healthy volunteers who smoke, with no current or history of psychiatric illness, between the ages of 18 and 65, for a multitude of studies. Studies may include PET scans, MRI, psychological interview, neuropsychological testing and other procedures depending on the project in which you choose to participate. Call (301) 435-8982 for more information.

Study for Mothers of 4- and 5-Year-Olds

Are you a mother of a 4- or 5-year-old? You may be able to participate in the Mothers' TAKE study, which stands for Mothers' Thoughts About what their Kids Eat. Participants will fill out online surveys and complete one 90-minute in-person session at NIH. Your child will not need to participate. Compensation is provided. Call (301) 451-1268 or email mothers.take@gmail.com and leave a phone number where you can be reached. Refer to study 10-HG-0076.



Hawk Pursues Unlicensed Hunt Near Bldg. 31

NIDDK health science policy analyst Dr. Eleanor Hoff was leaving work late on Mar. 4 when she and her friend Jennifer White, an NIH contractor, witnessed a red-tailed hawk having a squirrel dinner in the grassy area in front of Bldg. 31. "The hawk let us get pretty darn close," said Hoff. "It seemed much more intent on eating than on the paparazzi... These red-tails are such a neat part of life around Bldg. 31, and it was just such an amazing opportunity to see one close up like that."

PHOTO: ELEANOR HOFF

NICHD Conference Explores Down Syndrome Registries

In partnership with the Global Down Syndrome Foundation, NICHD recently hosted a conference to explore ways of establishing a comprehensive system of patient registries, research databases and bio-banks to meet the needs of people with Down syndrome and their families.

A patient registry is a voluntary database in which patients provide information about their condition, typically in a computerized, electronic format. Bio-banks, or tissue banks, store biological samples such as blood or DNA for later use in studies.

The NICHD conference explored development of a comprehensive online registry where people with Down syndrome and their families who are interested in participating in research or treatment studies could register. Patient records and other clinical information could be stored in a research database. Researchers interested in learning more about Down syndrome and in designing studies to treat the condition could then have ready access to the information. The research database could then be linked to a bio-bank, where donated samples, such as various cells and tissues, would be stored. Researchers undertaking clinical studies could alert prospective volunteers through the registry. They also could share the data they collect in the research database, which would be available on a secure basis and with provisions to maintain patient confidentiality.

"The question now up for discussion is not whether a Down syndrome patient registry, research database and bio-bank will be created, but how," said NICHD deputy director Dr. Yvonne Maddox. "This conference will lead to plans for the future, the advancement of Down syndrome research and the improvement of the lives of people with Down syndrome and others affected by this condition."

Down syndrome, also called trisomy 21, is a set of mental and physical symptoms resulting from an extra copy of chromosome 21. Symptoms can range from mild to severe and usually involve delays in mental and physical development. People with Down syndrome may also have heart problems at birth, thyroid dysfunction, hearing loss, Alzheimer's disease and other health problems.

NICHD has issued two Requests for Information from the research community about how a Down syndrome research database and bio-bank could be structured.

Nearly \$15,000 Raised Annual Circus Event Puts The Fun in Fundraiser

PHOTOS: MICHAEL SPENCER

The 14th annual Children's Premiere Night at Ringling Bros. and Barnum & Bailey Circus on Mar. 23 was a huge success, according to organizers. The event was a joint effort by the NIH Recreation & Welfare Association and Easter Seals. More than 8,200 were on hand, including 4,000 who attended free as guests. The event offered an entertaining night out to patients from area hospitals—including the Clinical Center—and several Easter Seals group homes.

"Thanks for providing our family an evening filled with fun at the circus," said B. Howdershell, a Special Love parent. "My wife and I had a great time as did our children who didn't want to leave at the end. Being able to attend the pizza party, which was attended by the circus clowns and performers...[seeing] their generosity, kindness and interaction with the kids was special."

Also invited to the party were children from family shelters, the YMCA, the National Children's Medical Center and several other social service organizations. Earlier that day, a couple of Ringling Bros. clowns visited the Clinical Center and the Children's Inn, bringing some of the circus fun to NIH's campus.

The fundraiser benefits NIH charities, including Special Love, the Children's Inn and Friends of the Clinical Center. This year's event raised close to \$15,000.

"It is a labor of love for the staff and volunteers of the R&W," concluded Randy Schools, R&W president. "It's a wonderful opportunity for us to assist our community."



Youngsters (from l) Halle, Elle and Sydney Howdershell enjoy the company of a Ringling Bros. & Barnum & Bailey Circus clown. Below at left are "Clown Alley" members Alex Barney (l) and Daniel Sanchez. Below right, Barney and Sanchez pose with patients Philip Bethel (in mask) and Shanika Hall (rear, r), who was accompanied by her mother and baby sister. The circus clowns visited both the Clinical Center and the Children's Inn at NIH on Mar. 23.



Above, Philip Tyler Duncan (c) enjoys the company of the Clown Alley denizens, who pose at right with patient Jack Duzzuto.